

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------|
| Applicant's or agent's file reference B 14208.3 FG | FOR FURTHER ACTION | See Form PCT/IPEA/416 |
| International application No. PCT/FR2004/050129 | International filing date (day/month/year) 29.03.2004 | Priority date (day/month/year) 31.03.2003 |
| International Patent Classification (IPC) or national classification and IPC C08F112/12, C08F4/48 | | |
| Applicant COMMISSARIAT A L'ENERGIE ATOMIQUE | | |

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a. ☐ (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:

☐ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

| | | |
|-------------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

| | |
|-----------------------------------------|-----------------------------------|
| Date of submission of the demand | Date of completion of this report |
| Name and mailing address of the IPEA/EP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FR2004/050129

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-21 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. 1-13 _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* _____ received by this Authority on _____
- nos.* _____ received by this Authority on _____
- ☐ the drawings:
- sheets _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FR2004/050129

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|------|-----|
| Novelty (N) | Claims | 1-13 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | 1-13 | YES |
| | Claims | | NO |
| Industrial applicability (IA) | Claims | 1-13 | YES |
| | Claims | | NO |

2. Citations and explanations (Rule 70.7)

1. Reference is made to the following documents in the present notification:

D1: GB 1 076 897 A (RUETGERSWERKE UND TEERVERWERTU) 26 July 1967

D2: DE 12 25 866 B (TEERVERWERTUNG AG; RUETGERSWERKE AG) 29 September 1966

Document D1, which is considered to be the prior art closest to the subject matter of claim 1, describes (the reference signs between parentheses apply to this document) the preparation of a poly(alpha-methylstyrene) polymer (example 1) in an aprotic non-polar solvent. D1 describes (cf. the description) the addition of a polar solvent to increase the reaction rate (page 1, column 1, lines 29-31) and a polymerisation temperature between -60 °C and 60 °C (page 1, column 2, lines 46-48).

The subject matter of claim 1 differs from the example of D1 in that the use of two different solvents one after the other is not described therein.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

It follows that the subject matter of claim 1 is novel (PCT Article 33(2)).

The problem that the present invention is intended to solve can thus be considered to be that of providing a method for preparing poly(α -methylstyrene) useful for preparing poly(α -methylstyrene) with a controlled polydispersity index and molar weight of the polymer.

The solution to this problem, as proposed in claim 1 of the present application, is considered to be the use of two different solvents one after the other.

The use of the solvents one after the other enables poly (α -methylstyrene) having a polydispersity index of less than 1.1 to be achieved.

It follows that the subject matter of the claim involves an inventive step.

Claims 2 to 13 are dependent on claim 1 and thus also comply, as such, with the requirements of novelty and inventive step of the PCT.